

MODIS Technical Team Meeting
Friday, October 13, 2000
1:00-2:30 PM

Vince Salomonson chaired the MODIS Technical Team meeting. Present were Ed Masuoka, Mike Roberto, Bruce Guenther, Harry Montgomery, Eric Vermote, Skip Reber, Steve Kempler, Al Fleig, with David Herring and Rebecca Lindsey taking minutes.

1.0 SCHEDULE OF UPCOMING EVENTS

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| • Ocean Optics XV
Monaco | October 16-20 |
| • PORSEC 2000
Goa, India | December 5-8 |
| • AGU Fall Meeting
San Francisco, CA | December 15-19 |

2.0 MEETING SUMMARY

2.1 DIS Update

Salomonson initiated a discussion regarding how well the processing of MODIS data is progressing and what can be done to improve matters. Salomonson asked Justice the status of the report from the Science Data Working Group, and whether the report reflected the state of processing appropriately. Justice reported that the report was basically finished, except for some final copy editing, and that it is available on an ftp site. He also felt that the report could go to Ghassem Asrar in its present form to be used as a background document as a basis for discussion for the instrument team and the Project Office. An SWGD telecon will be held in the next two weeks.

2.2 MODIS Project Reports

Salomonson reported that the request for the Aqua MODIS Band 31/32 gain change was approved by Dr. Asrar. This development is a very positive one about which the MODIS Team is very pleased. He also reported that officially, Aqua will launch no earlier than May 7. Paul Ondrus has acknowledged receipt of Salomonson's request for switching to Terra/MODIS B-side electronics.

2.3 Instrument Update

Roberto reported that Terra MODIS has experienced 31 events since it came back online August 19, with no apparent data loss. Montgomery asked if the instrument team knew

the reason for the decrease in the Formatter fault rate. Roberto indicated that during instrument recovery the fault rate decreased as the Format Engine temperature increased from about minus 5 degrees C to about minus 2 degrees C (also the power supply converter temperature increased about 3 degrees C). However, recently the fault rate has increased to an average of about 2 per day with the Format Engine at around minus 0.3 degrees C. It appears that the noise has increased since August 5, possibly due to some hardware damage. Raytheon/SBRS has suggested that there may be extra pulses that occasionally are input to the 100 kHz Formatter clock input. This signal comes from a Field Programmable Gate Array (FPGA). However, this clock input worked fine in the Formatter Upload mode, even at cold temperature during instrument recovery, when there were several hundred faults per hour in the normal science mode. So far, we are not aware of any loss of science data due to the Formatter faults since instrument recovery.

Guenther asked what the implications were for Aqua MODIS. Roberto said that if the team became convinced that the Terra MODIS had sustained damage and that it could be identified, then a decision would have to be made regarding impact on the reliability of the Aqua instrument, risk of changing out the part on Aqua, etc. At this point, no part has been identified as suspect.

Roberto said that we have discussed the MODIS failure with Component Technologies and Radiation Effects Branch personnel and will continue to work with them and with SBRS to try to identify any component that may have been damaged. However, based on what is now known, Roberto believes the only changes to the Aqua MODIS currently under consideration are to possibly run the instrument warmer and/or implement the software patches provided to the Terra MODIS. The more likely means of running the instrument warmer would be to reduce the Main Electronics Module (MEM) radiator area. Another method under evaluation is the possibility of providing temperature control to the MEM.

2.4 GDAAC Update and Golden Month Discussion

Kempler reported that GDAAC processing is proceeding well. They are processing day 275 today. The month is 99% or better completion for each day. They are catching up a day a week due to good Level 0 data, and the ability to process back log when the data aren't good.

Salomonson asked whether the Golden Month will be more than month. Masuoka replied that to make all the product suites we have to produce 6 weeks of products. The month the PI Processing group has come up with is October 31-December 18. Vince expressed concern with that and wondered whether the "month" could be more focused on October. Discussions ensued and the matter will be examined.

There was a general discussion of what "Golden Month" means. Salomonson said that it was intended to mean complete, good science-quality months. Justice reported that the PI processing group has been discussing the issue extensively. With the current status at the GDAAC, we are already moving toward complete months, which is what we want.

Availability of revised PGEs has been an issue for Golden Month processing. Masuoka said that by the time we get to the scheduled Golden Month, we will have all the new "golden algorithms," and that we would be able to focus on processing that period and get it finished. Justice said that the plan was to assess the progress of Golden Month processing somewhere around the third week in and make decisions about how to continue. An important point is the ability of the system to accommodate processing and reprocessing at the same time.

Guenther expressed concern about the impact on the Level 1B data of the mirror-side RVS uncertainty discussed at the previous week's meeting. MCST needs time to quantify what that issue is. MCST hopes that Santa Barbara Remote Sensing can help them understand the problem. MCST believes they will be able to inform the team of the impacts of the mirror-side uncertainty by the end of October, and thus give an idea of the quality of the Level 1 products.

Guenther pointed out that the ocean group was unable to get the quality they needed from Sea Surface Temperature until MCST improved the response versus scan angle (RVS). Those corrections were made from data on 118. But since then the definition of which mirror side is which seems to have changed. What we currently provide to Miami for RVS sometimes makes their product worse rather than better. So for SST we need to have addressed this problem. Masuoka wondered whether other products could forward, if only the SST was affected. Guenther said he didn't know.

Guenther asked how much of the hardware for Aqua becomes available for Terra reprocessing in January. Kempler reported that he has asked Mike Moore, and is expecting a response soon. Justice said his understanding was that the hardware is at the GDAAC. Kempler said that it is, but has not been hooked up or tested. Guenther commented that since Aqua was supposed to launch in December, and is not ready, we could possibly use their system to help Terra MODIS get caught up on processing. Masuoka pointed out that the MODAPS Aqua-related hardware is not yet available, though.

Kempler reported that public release of Oceans data was today. Also, the GDAAC is tracking user comments and complaints.

2.5 SDST Update

Masuoka provided tables showing the status of Level 1 products at GDAAC and MODAPS for days 249-272 (see Attachments 1 and 2). He pointed out that all days during the period were 99% or better completion at the DAAC. Things aren't quite as good in MODAPS. MODAPS is on day 264, while GDAAC is on 275. Now that the GDAAC is processing well, the focus will be on MODAPS. MODAPS is having a problem with disk space issues. Masuoka also provided a table indicating that we should be able to begin processing the October 31-December 18 Golden Month on November 8 (see Attachment 3).

Masuoka also provided a table (See attachment 4) showing the status of PGE changes needed for Golden Month processing. One critical item is getting ESDT changes for the Level 1 products. We have Aqua ESDTs, but not Terra.

Justice commented that we need to discuss the system processing capacity and what is currently being accomplished. He felt the next big bottleneck will be the DAACs getting the data out to the users. Kempler indicated that data distribution was at about 2/3 capacity before the newly-released ocean and atmosphere products were added. Kempler added that unless we get more hardware, we will not be able to reprocess without stopping going forward.

Masuoka reported that a chart from Gene Legg at NOAA indicated that NOAA was seeing between 5-15 missing granules per day in data delivery from EDOS, sometimes as many as 30. GDAAC is having to reorder about 10-15 % of the EDOS data.

Salomonson asked how many Level 2 and Level 3 products we would be doing for the Golden Month. Masuoka replied that they are planning to do all of them, about 45. Kempler asked if all of the Golden Month products would be publicly-released products. Ed replied that some would, but not all.

Currently in MODAPS, the Level 2 products are being produced at the 99% - 100% level. The governing factor on completeness is whether or not all Level 1A and Level 1B granules for a given day were produced. Missing Level 1 products (a granule or two per day, at most) are due to Level 1-software problems handling bit-flips. A patch to fix the granule failures has been delivered to the GSFC DAAC.

Kempler asked that Masuoka send him the list of product release dates provided by Murphy so that he could verify that the dates match up with what the GDAAC can do.

Salomonson asked if it was the same list as Diane Wickland had previously received. Justice thought it was, for the most part. Reber commented on the recurring issue of what is meant by "release dates." Are we talking about instrument team release dates or GDAAC public release dates? Salomonson suggested that there needs to be one place that provides the accurate information.

2.6 Aqua Update

Fleig reported what they hope to be a minor glitch in Aqua geolocation. They put in the parameter for the mirror, and one of the numbers they received from SBRS is way too large for the mirror to work. It would cause 6 lines from one scan to overlap with 6 other lines during every rotation. They expect that SBRS simply copied the wrong number into the wrong slot. It is crucial that they receive an answer. Guenther agreed to contact SBRS regarding this.

2.7 Land Update

Justice reminded group of the MODLAND special edition that is being put together. He wondered whether anyone had any potential contributions. Guenther said that one was coming from MCST on the Level 1B. He said he would provide Justice with a rough idea of subject/title/authorship.

Justice said there will be a discipline leaders meeting next week discussing several issues: 1.) developing a data processing policy and process for making changes in lower level products that affect other products, 2) the agenda for MODIS Science Team (MST) Meeting. Justice said there was interest from the ST on the timing of the recompile. It was hoped that the timing would not be such that those ST members reselected to undertake continuity activities would not have to lay staff off due to a break in support. Salomonson reported that he had heard from King that he (King) will be meeting with Jack Kaye about the last issue.

Vermote asked Guenther about cross-talk correction. Guenther replied that MCST has some more testing in two weeks, and when they have those results, they will sit down with discipline leaders and others to delineate the pros and cons of various suggestions for dealing with the problem. They would like to have it done before October 30. With respect to MCST's proposal regarding the change in scaling to prevent early saturation in some bands, Vermote doesn't think changing the scaling for the bands will affect the land products.

2.8 MAST Update

Lindsey reported for Conboy that the tentative dates for the next MST meeting are January 24-26, at or near GSFC. The Atmosphere Group Meeting will be January 23, and the Ocean Group and Calibration Group meetings are to be decided. Justice said that the Land group would compromise about having a separate meeting before the MST meeting, perhaps taking a half day, so that MCST can have more time for a calibration meeting.

There was general discussion about the image gallery on the MODIS web page and keeping it updated with the most current MODIS images. Herring reiterated that the plan was to make the MODIS page the primary publication point for MODIS images, and then secondary publication on earth Observatory/Visible Earth. Herring noted that there was a PAO release about Robert Brakenridge's use of MODIS data to map floods in Vietnam and Cambodia.

3.0 ACTION ITEMS

3.1 Action Items Carried Forward

1. Salomonson: Work with Yoram Kaufman and Skip Reber to produce some metrics from the science community to describe the status of data processing as accurately as possible.

Status: Ongoing.

2. Masuoka and Conboy: Work with Patent Counsel, Legal, and Procurement to resolve issues concerning MODIS Science Team Member software distribution.

Status: Closed. Met with Procurement personnel and Legal on August 28 to discuss data right issues as they relate to MODIS University contracts. Patent Counsel and Legal have agreed that under the Team Member University contracts, the government has the right to distribute data as they see fit.

3. MODIS Science Team: Send updates on MODIS metadata terms/valids to Skip Reber (reber@skip.gsfc.nasa.gov). These are terms that enable users to search MODIS data. This is part of a request to the Terra Instrument teams to update metadata terms.

Status: Ongoing. Group needs Reber to clarify, reiterate the request.

4. Masuoka: Represent MODIS concerns on data throughput to EDOS.

Status: Ongoing. The Review Committee is now preparing a report articulating the impacts to the community.

5. Kempler to provide a hardware upgrade schedule, including direction on processing power.

Status: Ongoing.

6. Need discussion between SDST and NOAA on completeness of data and process by which we can get more rapid turn around on snow cover and also perhaps sea surface temperature.

Status: Ongoing.

7. Murphy asked disciplines leads to provide final updates to product release table.

Status: Ongoing.

8. Discipline leads to meet to resolve the issue of beta release code and science-quality code, and what we need to say about it.

Status: Ongoing.